FROST & SULLIVAN

BEST PRACTICES

AWARDS

FROST & SULLIVAN

2020 BEST PRACTICES AWARD

GUARDHAT

2020 GLOBAL
CONNECTED SAFETY
COMPANY OF THE YEAR AWARD

Contents

Background and Company Performance

Industry Challenges

Serious workplace injuries cost heavy manufacturers in the United States $1 billion per week, mostly due to overexertion, falls, and collisions with equipment.[1] Moreover, a significant gap exists in industries with high-risk occupational hazards and highly mobile workers (such as those in chemical facilities, oil and gas sites, construction, and mining) but with limited connectivity—resulting in restricted situational awareness for both individuals and organizations. This lack of 'last mile' connectivity translates to a knowledge and safety gap in discerning the location of individuals, the surrounding conditions, and sub-optimal communications. As a result, the personal protective equipment (PPE) market is slowly but surely transforming into a larger connected safety space, integrating wearable technologies into product offerings that intend to boost security and protection protocols, worker productivity, and long-term cost savings. Digitalization and automation drive this renaissance in the market, enabling enterprises to connect sensors and monitors to the Internet of Things (IoT) and machine-to-machine communications, thereby achieving increased safety and better compliance in the industrial workspace.

Participants in the connected safety environment view industry challenges from different angles, such as a deployment perspective, user privacy concerns, or return on investment (ROI). In the first instance, ease of deployment is critical as end-user companies are often resistant to significant process changes. Furthermore, adding smart technology wearables to PPE increases equipment cost and requires more investments in sophisticated multi-vendor platforms and systems—a less attractive option for price-sensitive buyers. As a result, enterprises resist implementing complicated changes and investments in connected PPE because the ROI seems like a marginal benefit for an indistinct timeline. User acceptance of PPE wearables, in the second instance, is driven by workers' feedback, or to be more explicit: Workers' concerns about privacy. Providing workers with a location-detecting sensor becomes convoluted when the information feeds into a platform where it is publicly visible and workers feel that 'Big Brother is watching.' Notwithstanding these issues, the biggest challenge currently emerging in the connected safety ecosystem is the lack of technological adaptability, i.e., the ability to connect different types of sensors or wearables (on the worker's body or in and around the worker's proximity) to same-structure architecture, providing a consolidated outlook on a single dashboard with a real-time on-site understanding of the exposure level. Introducing advanced technologies for smart head protection may prove demonstrable value, as this segment is still in a nascent stage. Incorporating sensors and communication elements in the helmets that relay information to a platform system can provide critical information for monitoring location, atmosphere or hazards, and situational responsiveness.

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[1] https://www.libertymutualgroup.com/about-lm/news/documents/2019-workplace-safety-index.pdf, accessed January 2020

However, despite the vast opportunities in the landscape for smart head protection, innovation has been incremental.[2] The manifold potential benefits of smart PPE equipment remain unrealized as of yet, as it is mostly disconnected from the upstream systems and applications. Broader adoption and implementation depend on integrations with smart, wearable PPE. Caught between the technology development domain and an industrial facility setting, connected PPE manufacturers should leverage more on-the-ground feedback in developing products and ecosystems to help mitigate practical challenges and boost usability.[3]

Visionary Innovation & Performance and Customer Impact of Guardhat

Established in 2014, Guardhat combines intelligent proprietary software with modern wearable technology to provide frontline industrial workers connected safety and comprehensive situational awareness. Its founders—Saikat Dey, Mikhail Zhavoronkov, Anupam Sengupta and Senni Perumal—brought extensive experience from the heavy industry sector. Hence, the startup evolved from its first product, a smart hardhat, to more robust solutions and use cases, consistently striving to bridge the 'last mile' connection between wearable safety PPE and enterprise systems. Today, this IoT safety provider operates globally from its headquarters in Detroit, Michigan, supported by satellite offices in San Francisco, California; Dallas, Texas; Chicago, Illinois; Bangalore, India; and London, UK. With ten patents across various areas (such as real-time location systems and wearable solutions), Guardhat now recalibrates the industry standard for workforce safety and connectivity through fast uptake in utilities, telecoms, mining, construction, chemicals, as well as oil and gas, and heavy manufacturing environments.

The Bedrock of Guardhat's Safety Solution: Its KYRA Platform

In 2019, Frost & Sullivan awarded Guardhat, recognizing how its solution uniquely blends the entire gamut of data from the complete range of connected sensors and devices to an in-house developed control center platform called KYRA. As the KYRA platform ties together multi-modal data from disparate elements and formats into a single analytics engine, the platform delivers new levels of transparency to read individuals' mobility, position, floor level, proximity, and relationship to people and assets. The KYRA platform and analytics engine have a unique capability to process a massive amount of rich, real-time data (geo-stamped and time-tagged with event information) to present a single, human-centric vision and status assessment.

Guardhat's end-to-end solution empowers individuals and organizations in industries with high-risk occupational hazards by enabling an entirely new level of situational awareness. Spearheading the market, Guardhat adds an agile IoT component—i.e., to link a form factor such as a mobile application, hardhat, or tags—to monitor the workers' location,

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[2] *Wearables and Smart Personal Protection Equipment (PPE) Technologies for the Industrial Market: Wearable PPE Unveils Growth Opportunities with Promise of Improved Worker Productivity and Long-Term Cost-Savings,* (Frost & Sullivan, March 2016)

[3] *Global Internet of Things (IoT) and PPE Industry, 2016: Increased Scrutiny to Spur Early Adoption of Smart/IoT-enabled PPE by High-risk Industries,* (Frost & Sullivan, September 2017)

condition, and immediate environment continuously. Its intelligent system handles a range of data inputs, feeding a purpose-built IoT platform that consolidates and presents the spectrum of devices and wearable data sources on a single screen. In the event of a fall, exposure to toxic gases, lockout zones, proximity to moving equipment, etc., the system sends real-time alerts to both the user and supervisor. This instant insight into the situational context gives operators and on-site personnel a deeper understanding of how people and assets interact, bolstering better decision-making by offering comprehensive visibility throughout facilities.

Guardhat's value proposition lies in its ability to communicate the information, thereby allowing enterprises to address any issues proactively. Its custom-built real-time location system software connects individuals, assets, and a central hub to create a flexible peer-to-peer network. In an industrial context with typically limited communication capabilities, Guardhat's safety and injury prevention solution also improves response times and productivity—unlocking a universe of Big Data potential. Situational awareness can be stored for off-line analytics, redirected as a text message, or used for behavioral-based decision-making. For example, in case of a fire, the system can start recording a video or make telephony available to assist workers. In essence, Guardhat showcases that the value of technology and data sets only become apparent when it is integrated and gravitates towards a human-centric approach. According to Guardhat, its unique capability to provide a consolidated view of the people and the equipment empower enterprises to improve safety management and reduce workplace injuries by up to 20%.

Partnerships Propel Guardhat's Global Expansion

The Guardhat system goes beyond its own hardware and integrates with any connectable sensor and with a variety of third-party platforms. By embracing partners and customers in its design and deployment, Guardhat continues to increase its footprint across industries—co-branding products and developing robust and scalable enterprise solutions for worker connectivity and productivity use cases. For example, Guardhat joined forces with DuPont Sustainable Solutions, which brings industry and domain expertise-based insight through its data analytics team. Guardhat also relies on two products from Qualcomm Technologies—the Qualcomm® APQ8053 processor and the Qualcomm® MDM9207 modem—to power its solution in harsh industry settings. These alliances allow Guardhat access to a diverse industrial workforce, aggressively growing its global reach. Currently, the company has a footprint in North America, Europe, Russia, Brazil, and India—dynamically extending its low-cost wearable product offering in other regions.

Recently, Indranil RoyChoudhury joined Guardhat as Executive Vice President of Growth to strengthen the company's position at the forefront of industrial safety technology. With a proven track record of corporate expansion, he will navigate Guardhat's global outreach initiatives and curate partnerships to drive the company's vision—raising the level of awareness for worker safety. The company's commitment to constant learning within a positive and engaging workspace will equip employees to outperform competitors and sustain its double-digit growth.

Conclusion

In industrial settings, the multiple sensors, connected technologies, and wearable technologies have the promise to transform, but they remain disjointed across formats, systems, and control hubs. Understanding the industry gap, Guardhat developed the underlying technology, an Internet of Things platform, and visualization capabilities to bridge last-mile connectivity. Instant insight into the situational context gives operators and on-site personnel a deeper understanding of how people and assets interact, bolstering better decision-making by offering comprehensive visibility throughout facilities. Guardhat's KYRA platform and analytics engine, combined with its intelligent peer-to-peer communication capability, unlock a wealth of return on investment, safety, cost, and productivity benefits. Guardhat has efficiently proved that its solution could actively predict and prevent workplace accidents, introducing a better way to protect people and reduce workplace injuries by up to 20%. Partnerships with global solution providers further strengthen its position at the forefront of industrial safety technology, continually raising and recalibrating connected safety in the workplace.

With its visionary leadership, intelligent proprietary software, and stellar growth through prudent partnerships, Guardhat earns Frost & Sullivan's 2020 Global Company of the Year Award in the connected safety market.

Significance of Company of the Year

To receive the Company of the Year Award (i.e., to be recognized as a leader not only in your industry, but among non-industry peers) requires a company to demonstrate excellence in growth, innovation, and leadership. This excellence typically translates into superior performance in three key areas—demand generation, brand development, and competitive positioning—that serve as the foundation of a company's future success and prepare it to deliver on the 2 factors that define the Company of the Year Award: Visionary Innovation and Performance, and Customer Impact).

Understanding Company of the Year

Driving demand, brand strength, and competitive differentiation all play critical roles in delivering unique value to customers. This three-fold focus, however, must ideally be complemented by an equally rigorous focus on Visionary Innovation and Performance to enhance Customer Impact.

Key Benchmarking Criteria

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated each factor according to the criteria identified below.

Visionary Innovation & Performance

Criterion 1: Addressing Unmet Needs
Criterion 2: Visionary Scenarios through Mega Trends
Criterion 3: Implementation Best Practices
Criterion 4: Blue Ocean Strategy
Criterion 5: Financial Performance

Customer Impact

Criterion 1: Price/Performance Value
Criterion 2: Customer Purchase Experience
Criterion 3: Customer Ownership Experience
Criterion 4: Customer Service Experience
Criterion 5: Brand Equity

Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate Award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

STEP		OBJECTIVE	KEY ACTIVITIES	OUTPUT
1	**Monitor, target, and screen**	Identify Award recipient candidates from around the globe	• Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies	Pipeline of candidates who potentially meet all best-practice criteria
2	**Perform 360-degree research**	Perform comprehensive, 360-degree research on all candidates in the pipeline	• Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates	Matrix positioning of all candidates' performance relative to one another
3	**Invite thought leadership in best practices**	Perform in-depth examination of all candidates	• Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps	Detailed profiles of all ranked candidates
4	**Initiate research director review**	Conduct an unbiased evaluation of all candidate profiles	• Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles	Final prioritization of all eligible candidates and companion best-practice positioning paper
5	**Assemble panel of industry experts**	Present findings to an expert panel of industry thought leaders	• Share findings • Strengthen cases for candidate eligibility • Prioritize candidates	Refined list of prioritized Award candidates
6	**Conduct global industry review**	Build consensus on Award candidates' eligibility	• Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates	Final list of eligible Award candidates, representing success stories worldwide
7	**Perform quality check**	Develop official Award consideration materials	• Perform final performance benchmarking activities • Write nominations • Perform quality review	High-quality, accurate, and creative presentation of nominees' successes
8	**Reconnect with panel of industry experts**	Finalize the selection of the best-practice Award recipient	• Review analysis with panel • Build consensus • Select winner	Decision on which company performs best against all best-practice criteria
9	**Communicate recognition**	Inform Award recipient of Award recognition	• Present Award to the CEO • Inspire the organization for continued success • Celebrate the recipient's performance	Announcement of Award and plan for how recipient can use the Award to enhance the brand
10	**Take strategic action**	Upon licensing, company able to share Award news with stakeholders and customers	• Coordinate media outreach • Design a marketing plan • Assess Award's role in future strategic planning	Widespread awareness of recipient's Award status among investors, media personnel, and employees

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS

About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation, and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.